CLAIMS

1. A method for determining a physical location of a source, the method comprising:

receiving an acoustic signal from a source placed within an acoustic monitoring area;

processing a received acoustic signal, the processing using data from at least two sensors;

identifying an approximate localized point in the acoustic monitoring area, the approximate localized point defining a physical location of the source; and

reporting the physical location of the source over a network.

2. A method as recited in claim 1, wherein the source is one of a computer system and a rack including the computer center.

3. A method as recited in claim 1, wherein the acoustic monitoring area is a data center.

4. A method as recited in claim 1, wherein each sensor of the at least two sensors is a microphone.

5. A method as recited in claim 1, wherein the operation of processing the received acoustic signal is one of an arrival-time correlation process, distributed sensor/time of flight process, and echolocation process.

6. A method as recited in claim 1, wherein the approximate locale of the source is determined by an acoustic signal processor.

7. A method as recited in claim 1, wherein the physical location of the source is reported out-of-band.

8. A method as recited in claim 7, wherein the physical location of the source is reported using wireless technology.

9. A localizing system for determining a physical location of a source in an acoustic environment, the localizing system comprising:

a transmitter device for transmitting streams of acoustic signals, the transmitter device being defined on the source;

at least a pair of compact sensors for detecting and capturing the streams of acoustic signals; and

a signal processor for receiving and processing captured streams of acoustic signals so as to ascertain the physical location of the source.

10. A localizing system as recited in claim 9, wherein the physical location of the rack is ascertained using an arrival-time correlation process.

11 A localizing system as recited in claim 9, the localizing system further comprising:

a computer console for processing and displaying a location of the source in the acoustic environment.

12. A localizing system as recited in claim 9, wherein the pair of compact sensors is a pair of microphones.

13. A localizing system as recited in claim 9, wherein the acoustic environment is a data center.

14. A localizing system as recited in claim 13, wherein the data center includes a plurality of structures each including a system site, each system site including a plurality of racks, each rack including a plurality of computer systems.

15. A localizing system as recited in claim 14, wherein each system site includes a signal processor.

16. A localizing system as recited in claim 15, wherein each signal processor is defined on a central location in each system site.

17. A method for ascertaining a physical location of a failed computer system in a data center, the method comprising:

receiving a failure report from the failed computer system;

transmitting streams of acoustic signals;

capturing transmitted streams of acoustic signals; and

processing the transmitted streams of acoustic signals so as to determine the physical location of the failed computer system.

18. A method as recited in claim 17, the method further comprising:

reporting the physical location of the failed computer system.

19. A method as recited in claim 17, wherein the operation of receiving the failure report from the failed computer system includes,

generating the failure report by the failed computer system; and

communicating the failure report of the failed computer system.

20. A method as recited in claim 19, wherein the failure report is communicated out-of-band to a signaling circuitry.

21. A method as recited in claim 17, wherein the operation of transmitting streams of acoustic signals includes,

defining an acoustic signal emitter on an outer surface of a rack including the failed computer system; and

generating streams of acoustic signals having identifiable characteristics.

22. A method as recited in claim 17, wherein the operation of capturing the transmitted streams of acoustic signals includes,

receiving streams of acoustic signals;

identifying streams of acoustic signals having identifiable characteristics; and

capturing transmitted streams of acoustic signals having identifiable characteristics.

23. A method as recited in claim 17, wherein the operation of processing transmitted streams of acoustic signals so as to determine the physical location of the failed computer system includes,

sending transmitted streams of acoustic signals to a signal processor;

converting the transmitted streams of acoustic signals; and

executing converted streams of acoustic signals by a computer software so as to determine the physical location of the failed computer system.

24. A method as recited in claim 23, wherein the physical location of the failed computer system is determined using an arrival-time correlation process.

25. A method for generating a sonic map of a data center, the method comprising:

for each system site in the data center,

defining an acoustic signal processor on a central location of the system site; and

for each rack in the system site,

placing an acoustic signal emitter on a rack; and

for each computer system in the rack,

generating an identifiable signal;

communicating the identifiable signal to the rack;

transmitting associated streams of acoustic signals;

capturing transmitted streams of acoustic signals by the acoustic signal processor;

processing transmitted streams of acoustic signals; and

displaying a locality of the computer system generating the identifiable signals.